

CLAIMS

1. In an envelope detector for determining whether the level of a differential input signal DPIN - DNIN is above a reference voltage V_{REF} : means for converting the differential input signal to a differential current $IDP - IDN$ and the reference voltage to a reference current I_{REF} , means for comparing the currents to determine if $|IDP - IDN|$ is greater than I_{REF} , and means for indicating a valid differential signal when $|IDP - IDN|$ is greater than I_{REF} .

5 2. The envelope detector of Claim 1 wherein the means for determining if $|IDP - IDN|$ is greater than I_{REF} includes a first comparator for comparing $IDP - IDN$ with I_{REF} and a second comparator for comparing $IDN - IDP$ with I_{REF} .

3. The envelope detector of Claim 2 wherein the means for indicating a valid differential signal includes an OR circuit coupled to the comparators for providing an output signal when $IDP - IDN > I_{REF}$ or $IDN - IDP > I_{REF}$.

4. In a method of determining whether the level of a differential input signal DPIN - DNIN is above a reference voltage V_{REF} , the steps of: converting the differential input signal to a differential current $IDP - IDN$, converting the reference voltage to a reference current I_{REF} , comparing the currents to determine if $|IDP - IDN|$ is greater than I_{REF} , and means for indicating a valid differential signal when $|IDP - IDN|$ is greater than I_{REF} .

5 5. The method of Claim 4 wherein the currents are compared by comparing $IDP - IDN$ and $IDN - IDP$ with I_{REF} , and the valid differential signal is indicated if either $IDP - IDN$ or $IDN - IDP$ is greater than I_{REF} .

6. In an envelope detector for determining whether the level of a differential input signal DPIN - DNIN is above a reference voltage V_{REF} , the

differential input signal being cyclical with DPIN and DNIN each being greater than the other during alternate cycles and crossing over during a switching interval between the cycles: means for converting the differential input signal to a differential current IDP - IDN and the reference voltage to a reference current I_{REF} , means for comparing the currents and providing an output signal indicative of a valid differential signal when $|IDP - IDN|$ is greater than I_{REF} , and means for maintaining the output signal during the switching interval following a cycle in which $|IDP - IDN|$ is greater than I_{REF} .

7. The envelope detector of Claim 6 wherein the means for comparing the currents includes a first comparator for comparing IDP - IDN with I_{REF} and a second comparator for comparing IDN - IDP with I_{REF} , and the means for providing the output signal includes an OR circuit coupled to the comparators for providing the output signal when $IDP - IDN > I_{REF}$ or $IDN - IDP > I_{REF}$.

8. The envelope detector of Claim 7 wherein the means for maintaining the output signal comprises a Schmitt trigger responsive to the output signal from OR circuit.

9. In a method of for determining whether the level of a differential input signal DPIN - DNIN is above a reference voltage V_{REF} , the differential input signal being cyclical with DPIN and DNIN each being greater than the other during alternate cycles and crossing over during a switching interval between the cycles, the steps of: converting the differential input signal to a differential current IDP - IDN and the reference voltage to a reference current I_{REF} , comparing the differential current and the reference current, providing an output signal indicative of a valid differential signal when $|IDP - IDN|$ is greater than I_{REF} , and maintaining the output signal during the switching interval following a cycle in which $|IDP - IDN|$ is greater than I_{REF} .

10. The method of Claim 9 wherein $IDP - IDN$ and $IDN - IDP$ are compared with I_{REF} , and the output signal is provided when $IDP - IDN > I_{REF}$ or $IDN - IDP > I_{REF}$.
11. The method of Claim 9 wherein the output signal is passed through a Schmitt trigger having trigger levels set further apart than a change in the output signal during the switching interval.